

REMARKS

This Amendment is fully responsive to the non-final Office Action dated September 20, 2007, issued in connection with the above-identified application. Presently, claims 1-12 are all the claims pending in the application. With this Amendment, claims 1, 11 and 12 have been amended. No new matter has been added by this Amendment. Favorable reconsideration is respectfully requested.

In the Office Action, claims 1 and 11 have been objected to because of minor informalities. Specifically, the Examiner objected to the phrase “an electrical signal” in the claims. The Applicants have amended the claims as suggested by the Examiner. Accordingly, withdrawal of the objection to claims 1 and 11 is respectfully requested.

In the Office Action, claim 7 has been objected to for being dependent from a rejected base claim. However, the Examiner indicated that claim 7 would be deemed allowable if rewritten in independent form to include all the limitations of its base claim and any intervening claims. However, the Applicants have decided not to rewrite the claims at this time. The arguments and claim amendments presented herein are believed to be sufficient to overcome the rejections to the base claim from which claim 7 depends.

In the Office Action, claims 1-6, 8, 9, 11 and 12 have been rejected under 35 USC 103(a) as being unpatentable over Nakajima et al. (U.S. Patent No. 6,504,823, hereafter “Nakajima”) in view of Fee (US Patent No. 6,285,475, hereafter “Fee”).

The Applicants have amended independent claims 1, 11 and 12 to further distinguish the claims from the cited prior art. Specifically, claims 1, 11 and 12 have been amended to recite a common and novel feature of the claimed “signal determination means,” which is not believed to be taught or suggested by the cited prior art. As amended, claims 1, 11 and 12, in relevant part, recite the following:

“...signal determination means for determining a presence or absence of a data signal represented by an electrical signal received from an immediately upstream data transmission apparatus in the ring network based on a comparison between a level of the an electrical signal related to the received data signal and a threshold level”.

The features of the claimed “signal determination means” noted above are fully supported by the Applicants’ disclosure (see Applicants’ Application, ¶0038, ¶0099 and Fig. 4).

The present invention, as recited in independent claims 1, 11 and 12, is directed to a signal determination means in a physical layer that uses an electrical signal related to the upstream data signal to determine the presence or absence of a data signal. Conventional techniques, on the other hand, detect the presence or absence of an upstream data signal by detecting parallel data at the CPU. As a result, the present invention can detect a momentary loss of power in approximately 100 microseconds, instead of 100 milliseconds. Thus, the amount of time required to reboot the entire data transmission system after a momentary loss of power is significantly reduced.

In the Office Action, the Examiner relied on Nakajima in view of Fee for disclosing all the features of the signal determination means of independent claims 1, 11 and 12. Specifically, the Examiner stated that Nakajima discloses or suggests all the features of independent claims 1, 11 and 12, except for the features of the claimed “signal determination means.”

Briefly, the Examiner noted that Nakajima disclosed a networking monitoring system that includes a master node and a plurality of slave nodes connected in a ring-like manner. However, as correctly noted by the Examiner, none of the methods of network monitoring implemented in Nakajima include the use of a “signal determination means for determining a presence or absence of a data signal received from an immediately upstream data transmission apparatus in the ring network based on a comparison between a level of an electrical signal related to the received data signal and a threshold level” (see Office Action, pg. 3).

Therefore, the Examiner exclusively relied on Fee for disclosing or suggesting the above features of the “signal determination means” of claims 1, 11 and 12.

In the Office Action, the Examiner relied on Fee at col. 7, lines 7-20; and Figs. 7a and 7b for disclosing the “signal determination means.” However, Fee at col. 7, lines 7-20 describes the optical network illustrated in Figs. 4a and 4b. The optical network illustrated in Figs. 4a and 4b includes a photo diode 460 that detects an optical signal propagating through the network, and provides an electrical signal to a signal detector 480 for detecting a fault in an optical link. The output of the signal detector 480 determines whether an optical signal is being received by the photo diode 460.

Additionally, Fee at Figs. 7a and 7b merely discloses a composite optical signal before and after the addition of a low level subcarrier.

Based on the foregoing, the main difference between the fault detection circuitry in Fee and the “signal determination means” of the present invention is that Fee uses an optical signal for determining the absence of a data signal; wherein the “signal determination means” of present invention uses an electrical signal. In other words, in the present invention, the data signal is obtained by a modulating an electrical signal of a predetermined frequency. The data signal represented by the electrical signal is then transmitting to another apparatus in the system, which extracts the electrical signal for determining the presence or absence of a data signal. In Fee, the data signal is obtained by modulating an optical signal, which is transmitted to another location. The optical signal is then detected by a photo diode.

Based on the foregoing, no combination of Nakajima and Fee would result in, or otherwise render obvious, the present invention as recited in independent claims 1, 11 and 12. Likewise, no combination of Nakajima and Fee would result in, or otherwise render obvious, the present invention as recited in claims 2-6, 8 and 9; based at least on their dependency from independent claim 1.

In the Office Action, claim 10 has been rejected under 35 USC 103(a) as being unpatentable over Nakajima and Fee, in view of Becker (US Patent No. 7,209,488, hereafter “Becker”).

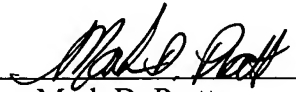
Claim 10 depends from claim 1. As noted above, Nakajima in view of Fee fails to disclose all the features noted above in claim 1. Additionally, Becker fails to overcome the deficiencies in Nakajima. Accordingly, no combination of Nakajima and Fee in view of Becker would result in, or otherwise render obvious, the present invention as recited in independent claim 1, from which claim 10 depends.

In light of the above, the Applicants respectfully submit that all the pending claims are patentable over the prior art of record. The Applicants respectfully request that the Examiner withdraw the rejections presented in the Office Action dated September 20, 2007, and pass this application to issue.

The Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues.

Respectfully submitted,

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